Avenview

AV Connectivity, Distribution And Beyond....

VIDEO WALLS VIDEO PROCESSORS
VIDEO MATRIX SWITCHES
EXTENDERS SPLITTERS WIRELESS
CABLES & ACCESSORIES

8x8 HDMI Matrix Switch over Single CAT5/6 With Deep Color & 3D Support

Model #: SW-HDM3D-C6-8x8E

Model #: HDM3D-C6SW-R

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Section 1: Getting Started

1.1 Important Safeguards

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
- Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
- Repair or attempted repair by anyone not authorized by us.
- Any damage of the product due to shipment.
- Removal or installation of the product.
- Causes external to the product, such as electric power fluctuation or failure.
- Use of supplies or parts not meeting our specifications.
- Normal wear and tear.
- Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

1.2 Safety Instructions

The Avenview SW-HDM3D-C6-8x8E HDMI Matrix Switch over Single CAT6 with Full 3D Support and Ethernet has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment's, the SW-HDM3D-C6-8x8E should be used with care. Read the following safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- ⚠ Do not dismantle the housing or modify the module.
- ⚠ Dismantling the housing or modifying the module may result in electrical shock or burn.
- ⚠ Refer all servicing to qualified service personnel.
- ⚠ Do not attempt to service this product yourself as opening or removing housing may expose you to dangerous voltage or other hazards
- ⚠ Keep the module away from liquids.
- ⚠ Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- ⚠ Have the module checked by a qualified service engineer before using it again.
- ⚠ Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

1.3 Regulatory Notices Federal Communications Commission (FCC)

This equipment has been tested and found to comply with Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

1.4 Introduction

The Avenview SW-HDM3D-C6-8x8E, HDMI Matrix with IR, Full 3D Support and now Ethernet over Single CAT6 provides the most flexible and cost effective solution in the market to route high definition video sources plus multi-channel (up to 7.1 channel) digital audio from any of the eight HDMI sources to the remote displays at the same time. Through low cost Cat-5/5e/6 LAN cables, not only high quality video and audio can be transmitted to the display sites, but also users can switch among eight HDMI sources using the push-in button or remote control. With single power design at the source site, each remote module is easily installed without power supply. Furthermore, the built-in IR extension function, users can control the HDMI source devices such as Blu-ray Disc Player, Satellite Receivers etc. at display site directly.

- Supports HDMI Deep Color & Full 3D
- HDCP compliant
- Allows any source to be displayed on multiple displays at the same time
- Allows any HDMI display to view any HDMI source at any time
- Supports 7.1 channel digital audio
- Supports default HDMI EDID and learns the EDID of displays
- The matrix master can switch every output channels to any HDMI inputs by push-in button, IR remote control, or RS-232 control
- Allows controlling local HDMI sources such as DVD and TiVo by attached IR extender from remote receiver to matrix master
- Allows to control matrix master through IR remote control at remote receiver's site
- Extends video signal up to 35m (115 feet) over CAT5e at 1080p and likely longer with better HDMI source device, better grade HDMI display, and better quality solid CAT6 cable
- Easy installation with rack-mounting and wall-mounting designs for master and receiver respectively
- Fast response time – 2~5 seconds for channel
- Ethernet Control

1.5 Package Contents

Before you start the installation of the MARTIX SWITCHER please check the package contents.

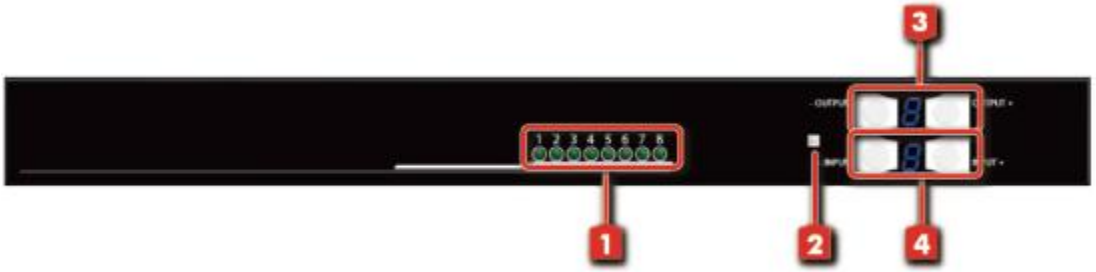
- SW-HDM3D-C5-8x8E x 1
- HDM3D-C5SW-R x 4
- IR Blaster x 1
- IR Receiver x 5
- IR Remote Control x 1
- Rackmounting Ear x 2
- Power Cable x 1
- User's Manual x 1
- Software CD x 1

1.6 Before Installation

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Don't place the product in too high temperature (over 50°C), too low temperature (under 0°C) or high humidity.
- Use the DC power adapter with correct specifications. If inappropriate power supply is used then it may cause a fire.
- Do not twist or pull by force ends of the UTP cable. It can cause malfunction.

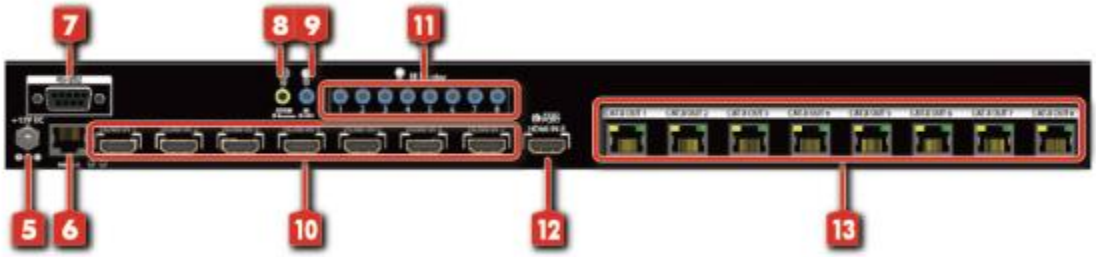
1.7 Panel Description

1.7.1 SW-HDM3D-C6-8x8E Front Panel



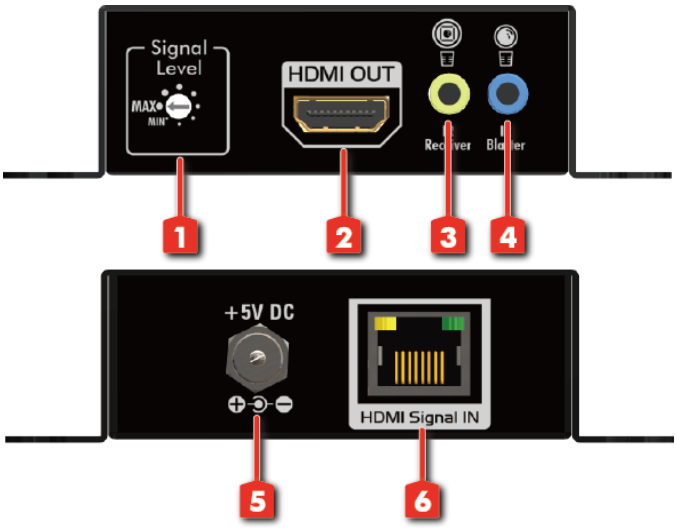
1. **SOURCE STATUS:** Input source indicator LED	2. **IR SENSOR:** IR sensor for receiving the IR commands from IR remote
3. **Output Push Button & 7-segment LED:** Front panel push buttons used to select the number of display channel & LED display for output ports	4. **Input Push Button & 7-segment LED:** Front panel push buttons used to select the number of input source & LED display for input channels

1.7.2 SW-HDM3D-C5-8x8E Rear Panel



5. **+5V DC:** 5V DC power jack	6. **ETHERNET:** Ethernet control port
7. **RS-232:** RS-232 control port	8. **SYSTEM IR RECEIVER:** Ext. IR receiver
9. **All IR Output:** 3.5mm IR blaster socket for HDMI source control on all 8 inputs	10. **INPUT 1-7:** HDMI inputs
11. **IR Blaster 1-8:** 3.5mm IR blaster socket for individual HDMI source control	12. **INPUT 8 & EDID Port**: HDMI input & EDID port for learning EDID from display
13. **OUTPUT PORT 1-4:** RJ-45 outputs for each output channel	

1.7.3 HDM3D-C6SW-R



1. **SIGNAL LEVEL:** Adjust the 8-level equalization	2. **HDMI OUTPUT:** Connect to HDTV with a HDMI cable
3. **IR RECEIVER:** Plug in IR receiver	4. **IR BLASTER:** Plug in IR blaster
5. **+5V DC:** 5V DC power jack	6. **HDMI SIGNAL IN:** Plug in a Cat.X cable

Signal Level (Signal Level 0 – 7)

Adjust the 8-level equalization control to the received HDMI signals. The HDMI signal level varies from 0 (strongest) to 7 (weakest) for respective transmission length from longest possible range to short distance. Please adjust the signal level from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!

Incorrect placement of IR Blaster and Receiver may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets. Warranty will not cover the damage.

1.8 IR Control Patch

IR Blaster Cable	IR Receiver Cable

IR Sockets

SW-HDM3D-C6-8x8E

All IR Out: The default location for IR blaster to transmit all IR command signals received from any of the four remote receivers to all of the HDMI sources.

IR BLASTER 1-4: IR blaster connected here can only transmit IR command signals from the remote receivers that are setting at respective input channel from 1 to 4.

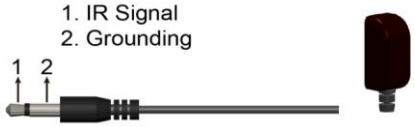
System IR: Receives IR commands from remote control

HDM3D-C6SW-R

IR BLASTER: IR control on individual display device

IR RECEIVER: IR receiver connected here can receive all IR command signals from the IR remote controls of SW-HDM3D-C6-8x8E and all other HDMI source devices.

IR Blaster



IR Receiver

1.9 Installation (SW-HDM3D-C6-8x8E)

To setup Avenview SW-HDM3D-C6-8x8E follow these steps for connecting to a device:

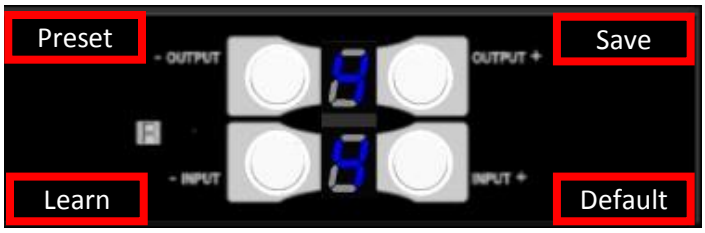
Matrix Switch

1. Connect all sources to HDMI Inputs on the Matrix Switch (SW-HDM3D-C6-8x8E)
2. Connect each HDMI CAT 5/6 output on the SW-HDM3D-C6-8x8E to respective CAT 5/6 input on the remote receiver HDM3D-C6SW-R
3. Connect IR BLASTER cable to the SW-HDM3D-C6-8x8E and direct the IR emitter to the build-in IR receiver of the sources
4. Connect the +5V 6A DC power supply to the SW-HDM3D-C6-8x8E
5. Power on all HDMI sources
6. Power on the SW-HDM3D-C6-8x8E

Receiver

1. Connect each HDMI output to HDMI displays.
2. Connect the **CAT5E/6 INPUT** on the HDM3D-C5SW-R to the **CAT5E/6 OUTPUT** port on the SW-HDM3D-C6-8x8E.
3. Connect IR receiver and place the IR receiver at the appropriate position that can receive the IR command signals sent from the users.
4. Dial the 8-level rotary control switch to adjust the HDMI signal level until the picture and sound are clear. It is recommended to dial from 7 to 0 to find the optimal visual experience.

1.10 Operation and IR Control



1.10.1 Method A: Push Button

1. IN/OUT MAP

1) Use the "+"or "-" output push button to select the number of display

2) Use the "+"or "-" input push button to select the number of input source
"+": change selected input/output port in ascending order
"-" : change selected input/output port in descending order

After you select the desired input/output port, the LED will blink twice and the setting will be effective

2. Save Mapping Mode

1) Keep pushing "output+ (save)"button until the output LED shows "d." to enter the Save Mapping Mode.

2) Use the "+"or "-" input push button to select the mapping configuration (0~7) which you want to save current input/output mapping

3) After you select the desired mapping configuration number, the LED will blink twice and the mapping setting will be saved

4) If you push the "output- (preset)"button before the mapping setting is saved, the LED will show "—""—"to quit the Save Mapping Mode

3. Preset Mapping Mode

1) Keep pushing "output- (preset)"button until the output LED shows "P." to enter the Preset Mapping Mode.

2) Use the "+"or "-" input push button to select the saved mapping configuration (0~7) which you want to recall

3) After you select the desired mapping configuration number, the LED will blink twice and the mapping setting will be effective

4) If you push the "output+ (save)"button before the mapping setting is effective, the LED will show "—""—"to quit the Preset Mapping Mode

4. Default EDID Mode

1) Push “input+ (default)”button to select the input channel which you want to learn default EDID and then keep pushing “input+ (default)”button when you select your desired input channel
2) Push the “+”or “-” output push button and then the LED will show “E”“d” one time to enter Learn Default EDID Mode
3) Use “+”or “-” output push button to select the default EDID mode(1~8)
4) Release “input+ (default)”button after selecting the desired default EDID mode, and then the LED will blink twice and the setting will be effective
5) It will quit the Learn Default EDID Mode if you push the “input- (learn)”button before the setting is effective
6) The LED will show “0”“0” if the setting is success

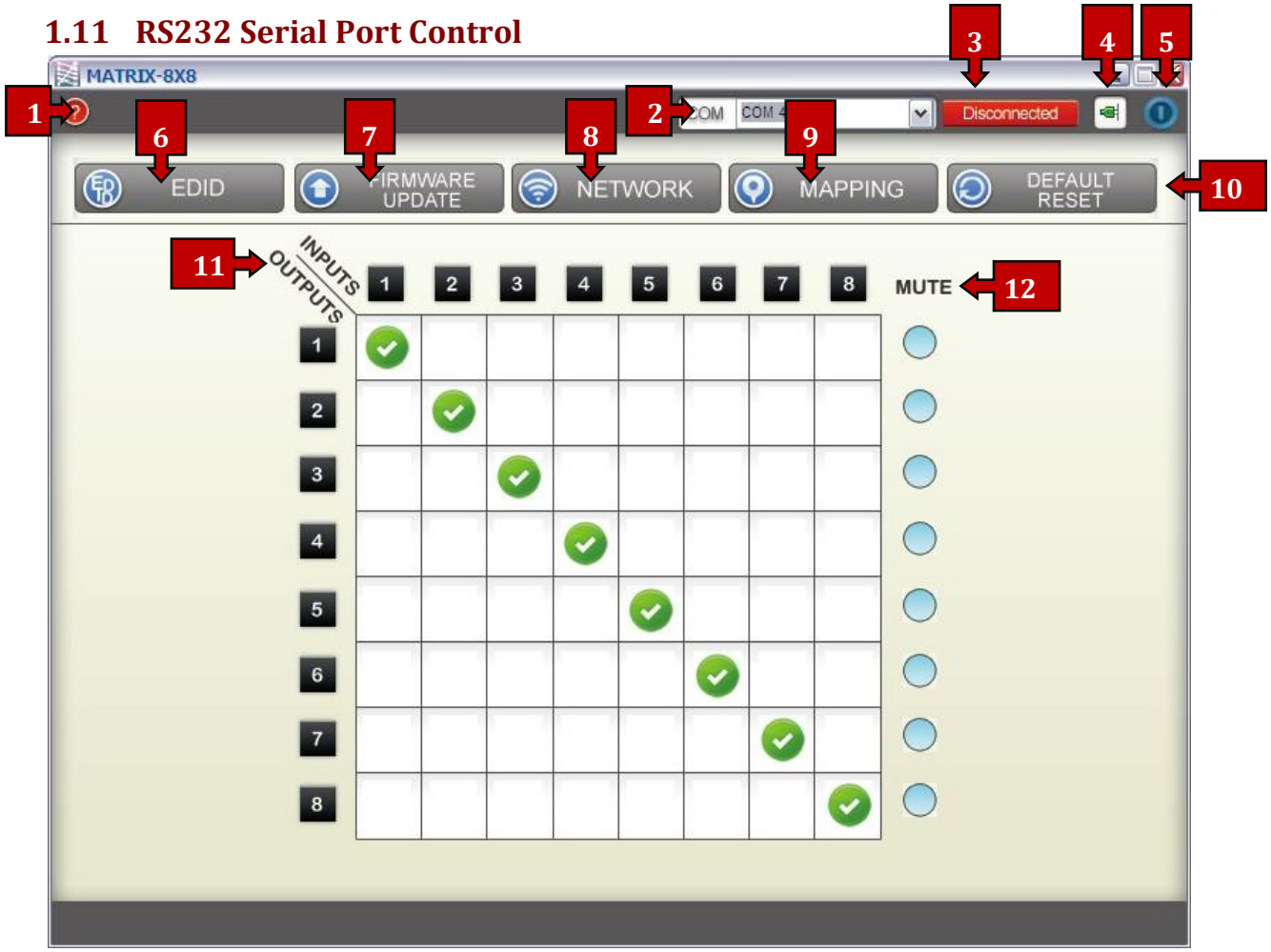
   The LED will show “F”“F” if the setting is failure

5. EDID Learning Mode

1) Push “input- (learn)”button to select the input channel which you want to learn EDID from EDID Port and then keep pushing “input- (learn)”button when you select your desired input channel
2) Push the “+”or “-” output push button and then the LED will show “E”“L” one time to enter Learn Output EDID Mode
3) Use “+”or “-” output push button to select EDID Port(number 4)
4) Release “input- (learn)”button after selecting the EDID Port number, and then the LED will blink twice and the setting will be effective
5) It will quit the Learn Output EDID Mode if you push the “input+ (default)”button before the setting is effective
6) The LED will show “0”“0” if the setting is success

   The LED will show “F”“F” if the setting is failure

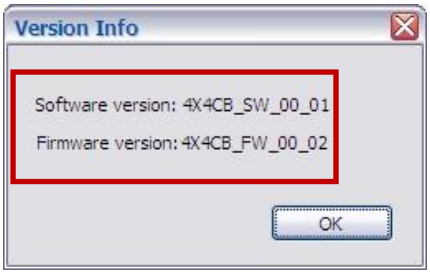
1.11 RS232 Serial Port Control



1	FW/SW Version Button	**7**	Firmware Update Button
2	COM Port Selection	**8**	Network Button
3	Connection Status	**9**	Mapping Button
4	Connect/Disconnect Button	**10**	Default Reset Button
5	Power On/Off Button	**11**	In/Out Switch Button
6	EDID Button	**12**	Mute Output Button

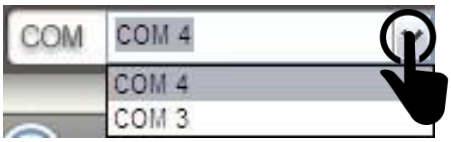
1. FW/SW Version Button

Click " " button to show version information



2. COM Port Selection

Click " " button to select COM Port



3. Connection Status

1) Connected Status:

2) Connecting Status:

3) Disconnected Status:

4. Connect/Disconnect Button

Click this button " " to change connection status

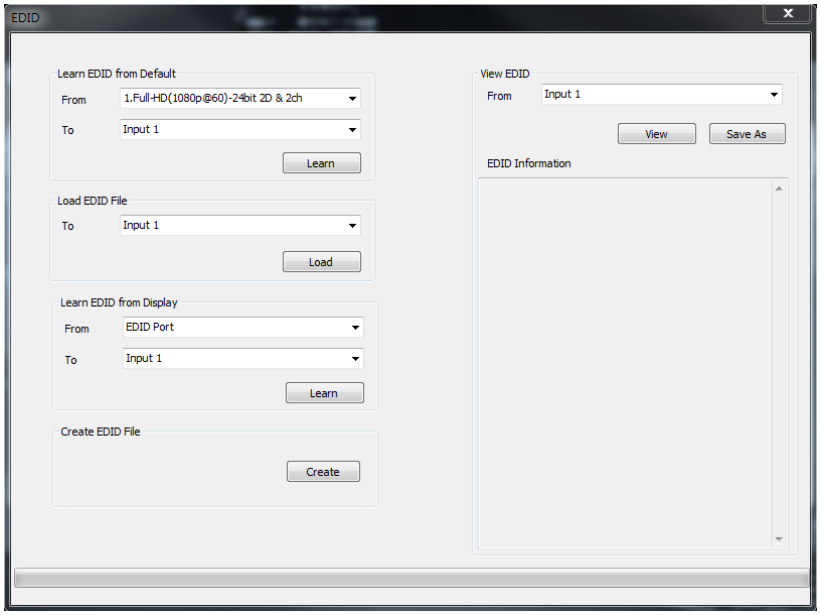
5. Power On/Off Button

Click this button to power on/off

“ ” **Power on status(Blue):** Click this button to power off device(Standby Mode)

“ ” **Power off status (Red):** Click this button to power on device

6. EDID Button



1) Learn EDID from Default

a) Select Default EDID(1-8 Default EDID)

b) Select Input

c) Click “Learn” button to learn default EDID

2) Load EDID File to Input

a) Select Input

b) Click “Load” button to select the EDID file

3) Learn EDID From Display

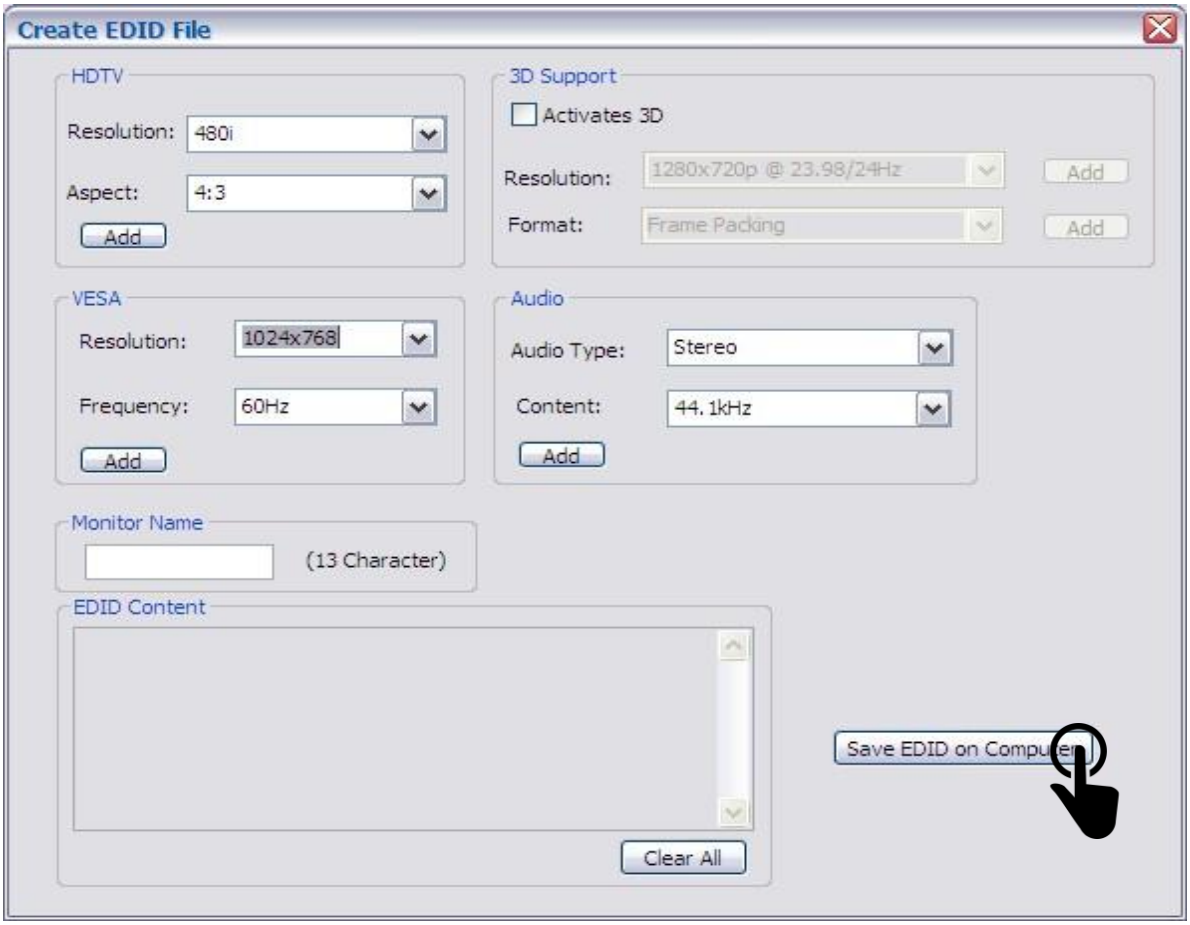
a) Select EDID Port

b) Select Input

c) Click “Learn” button to learn display EDID

4) Create EDID File

a) Click **“**Create**”** button to create EDID file



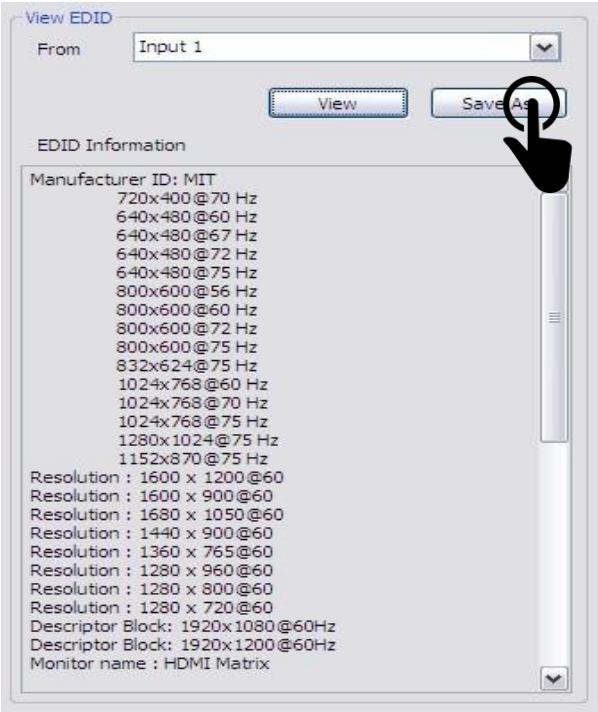
b) Select the EDID content

c) Click “Save EDID on Computer” to save the generated EDID as a file

View EDID Content

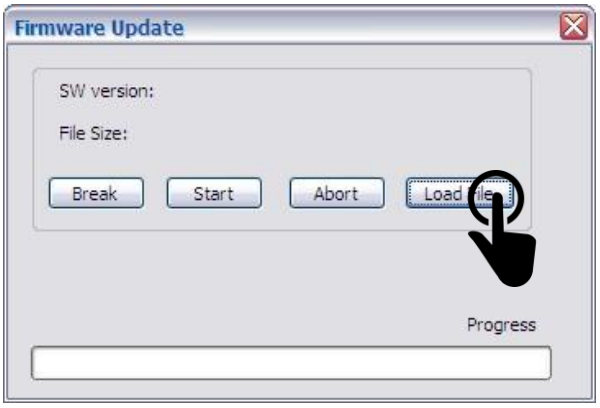
a) Select Input, or From File

b) Click “View” button to read the EDID and analysis

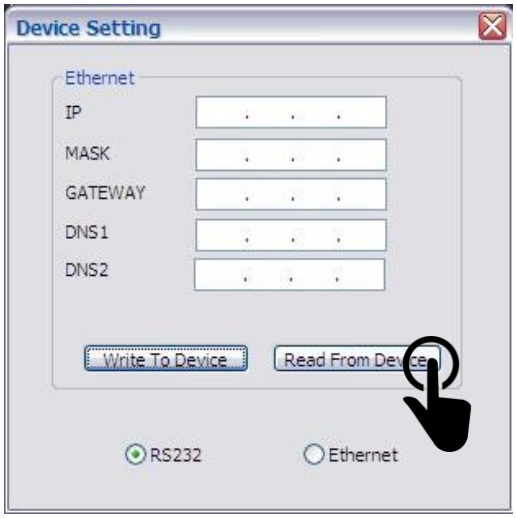


c) Click **"**Save As**"** to save the read EDID as a file on computer

7) Firmware Update Button



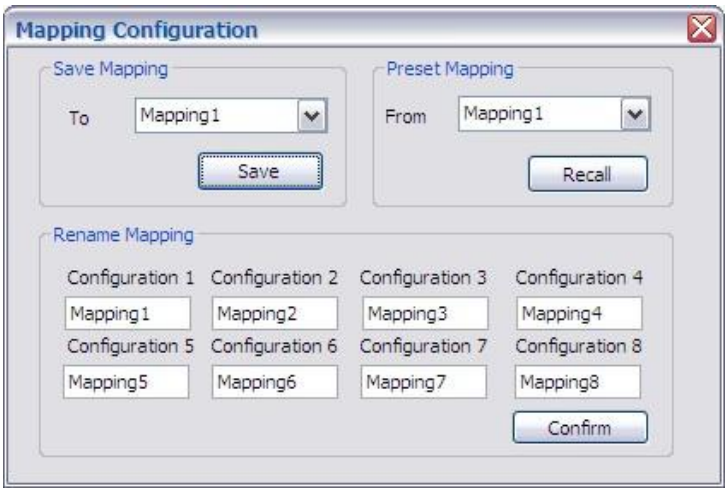
1) Click "Load File" to select the firmware file which you want to update
2) Click "Break" button
3) Quickly remove and reconnect the power input connector
4) Click "Start" button to begin the firmware update



8) Network Button

1) Click “Read From Device” to read the device IP address
2) Select “Ethernet” and then will be a pop-up windows
3) Key in the device IP address to the pop-up windows
4) Close the pop-up windows
5) Click the connected button to connect

9) Mapping Button



1) Save Mapping:
   a) Select Mapping(1-8)
   b) Click “Save” button to save current mapping

2) Preset Mapping:

a) Select Mapping(1-8)

b) Click “Recall” button to recall previous mapping which are saved

3) Rename Mapping:

a) Rename the mapping(Mapping1-Mapping8)

b) Click “Confirm” button to confirm the change

10) Default Reset Button

Click this button to do factory default reset

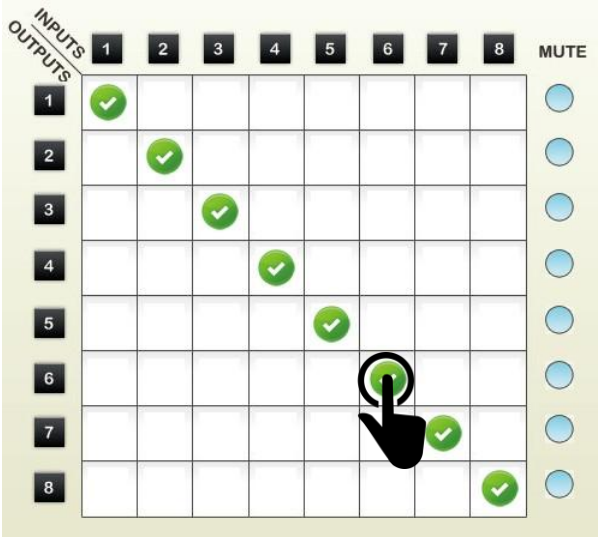
The default reset process will take about 80~90 seconds

11) In/Out Switch Button

Click the button on the checkerboard to select Input & Output port

User can click the input number button to let all outputs select the same input

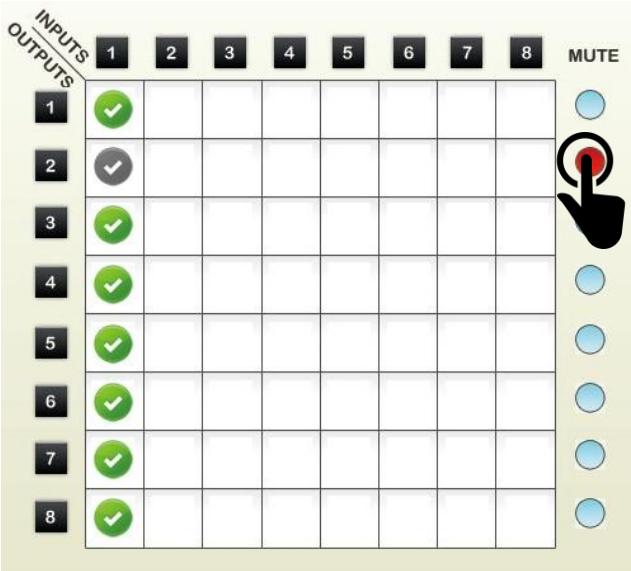
Ex: All outputs select input 3



12)Mute Output Button

Click the circle button to turn off output's video and audio

Ex: Mute Output 2



1.11 EDID Learning

Software Control: Please refer to the Operation Approach\ Method C: Software Control through RS-232 port

There are eight embedded default EDID as below,

1. Full-HD (1080p@60)-24bit 2D & 2ch

2. Full-HD (1080p@60)-24bit 2D & 7.1ch

3. Full-HD (1080p@60)-24bit 3D & 2ch

4. Full-HD (1080p@60)-24bit 3D & 7.1ch

5. HD (1080i@60)(720p@60)-24bit 2D & 2ch

6. HD (1080i@60)(720p@60)-24bit 2D & 7.1ch

7. Full-HD (1080p@60)-36bit 2D & 2ch

8. Full-HD (1080p@60)-36bit 2D & 7.1ch

The EDID learning function is only necessary whenever you encounter any display on the HDMI output port that cannot play audio and video properly. Because the HDMI source devices and displays may have various level of capability in playing audio and video, the general principle is that the source device will output the lowest standards in audio format and video resolutions to be commonly acceptable among all HDMI displays. In this case, a 720p stereo HDMI signal output would be probably the safest choice. Nevertheless, the user can force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally.

There are **THREE methods** to do EDID Learning as below,

1. Front Panel Push-in Button: Please refer to the **Operation Approach\ Method A: Push-in Button**

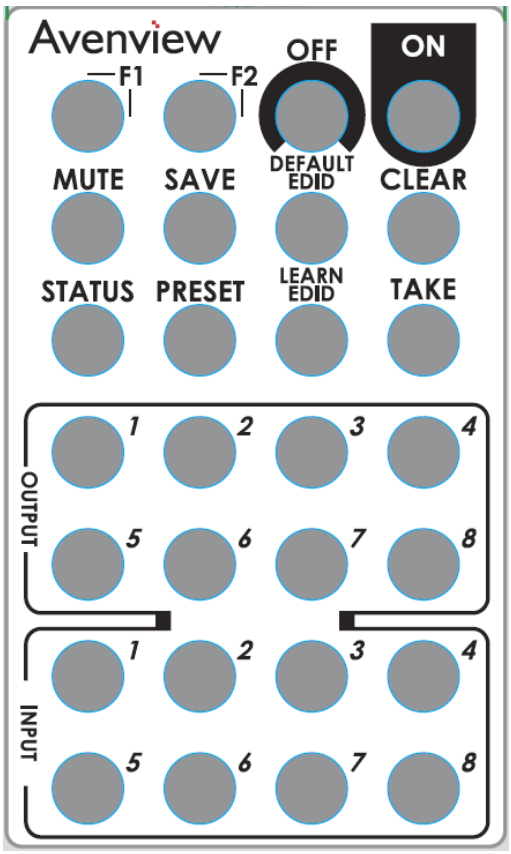
2. IR Remote Control: Please refer to the **Operation Approach\ Method B: IR Remote Control**

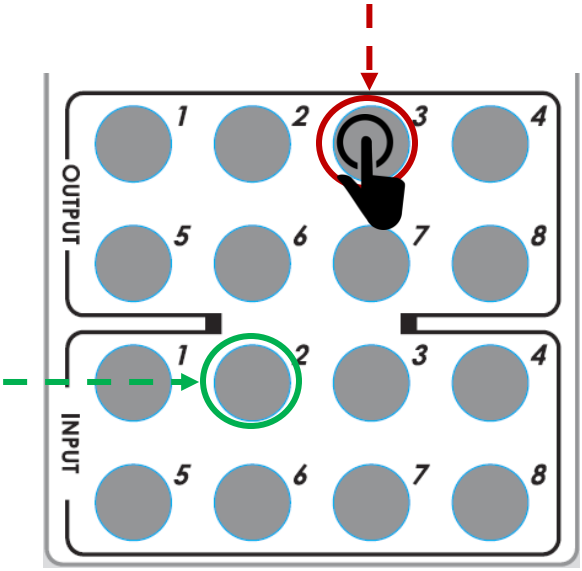
Section 2: Specifications

Item	Description	
Units	SW-HDM3D-C6-8x8E	HDM3D-C6SW-R
Unit Description	8x8 HDMI Matrix Switch over CAT6 with 3D Support	HDMI Receiver over CAT5 with 3D Support
HDMI Compliance	HDMI Deep Color & Full 3D	
HDCP Compliance	Yes	
Video Bandwidth	Single Link 225 MHz (6.75Gbps)	
Supported Resolutions	480i / 480p / 720p / 1080i / 1080p60	
Resolution and Distance	**Full HD:** (1080p) ~ 35meter (115feet) (CAT5e) / 40meter (130feet) (CAT6) **HD:** (720p/1080i) ~ 50meter (165feet) (CAT5e) / 55meter (180feet) (CAT6)	
Audio Support	Surround Sound (up to 7.1 Ch.) or Stereo Digital Audio	
Equalization	-	8 Level Digital Control
Input TMDS Signal	1.2 Volts (peak-to-peak)	
Input DDC Signal	5 Volts (peak-to-peak, TTL)	
ESD Protection	- Human body model — ±15kV (air-gap discharge) & ±8kV (contact discharge) - Core chipset — ±8kV	
Input	8x HDMI / 1x RS-232 / 1x Ethernet 1x IR socket for IR receiver	1x RJ-45 / 1x IR socket for IR receiver
Output	8x RJ-45 / 5x IR socket for IR blaster	1x HDMI / 1x IR socket for IR blaster
HDMI Input Selection	Push Button / IR Remote / RS232	Push Button / IR Remote
HDMI Source Control	Through IR Control Path from IR Receiver at Remote Receiver to IR Blaster at Matrix Switch	
IR Remote Control	Electro-optical characteristics: □ = 25° / Carrier frequency: 20~60kHz	
HDMI Connector	Type A (19 pin female)	
RJ45 Connector	WE/SS 8P8C with 2 LED indicators	
RS232 Connector	DE-9 (9-pin D-sub Female)	
3.5mm Connector	Earphone jack for IR blaster **[IR Main]** IR control on all source devices **[IR PASS-THROUGH 1~8]** IR control on individual source device	Earphone jack for IR receiver **[IR RECEIVER]** Receives IR commands from remote control
DIP Switch	[SW1~SW8] 2-pin for EDID & audio mode [SW Main] 4-pin for operation & firmware update	
Dimensions (L x W x H)	17” x 11” x 1.7”	3.3” x 2.4” x 1”
Power Supply	5V 4A DC	5V 2A DC
Power Consumption	20 Watts [max]	1 Watt [max]
Environmental		
Operating Temperature	32˚ ~ 104˚F (0˚ to 40˚C)	

Section 3: IR Remote User Guide

ON	Power on the matrix switcher
OFF	Standby mode
MUTE	Hide or Turn off the selected Output's Video/Audio
SAVE	Save current mapping mode
DEFAULT EDID	Default EDID selection
CLEAR	Clear the previous IR operation
STATUS	View Preset output Status
PRESET	Preset Mapping mode
LEARN EDID	Begin EDID learning from one output
TAKE	Trigger the previous setting
INPUT	Select the Input 1-8
OUTPUT	Select the Outputs 1-8
F1	Reserved
F2	Reserved





Ex: Select Input 2 to Output 3

Push the Green circle button as illustrated to select Input 2 then push the red button to output the source to Output 3.

Operation	Procedure	7-Segment LED
Mute Output Ex: Mute Output 3	**Mute + (Output 1~8) + Take** 1. Press “MUTE” button 2. Press number key “3” to select Output 3 3.Press “TAKE” button	**-** **0** **3** **0** **3** **0**
Output Status Ex: Output 4 (Input 2)	**Status + 1~8(Output 1~8) + Take** 1.Press “STATUS” button 2.Press number key “4” to select Output 4 3.Press “TAKE” button	**-** **-** **4** **-** **4** **2**
Save Current Mapping Ex: Save current mapping to 5	**Save + 1~8(1-8 storage site) + Take** 1.Press “SAVE” button 2.Press number key “5” to select the storage site 5 3.Press “TAKE” button	**d** **-** **d** **5**
Preset Mapping Ex: Preset saved mapping from 5	**Preset + 1~8(1-8 storage site) + Take** 1.Press “PRESET” button 2.Press number key “5” to select the storage site 5 3.Press “TAKE” button	**P** **-** **P** **5**
Learn default EDID Ex: Default EDID 2 Input 3	**Default EDID +1~8(1-8 default EDID) +1~8(input 1~8) + Take** 1.Press “DEFAULT EDID” button 2.Press number key “2” to select default EDID 2 3.Press number key “3” to select Input 3 4.Press “TAKE” button	**E** **d** **2** **d** **2** **3** 0 0 (success) **F** **F**(fail)

Learn EDID Port EDID Ex: Learn EDID Port Input 3	**Learn + D(EDID Port) +1~8(Input 1~8) + Take** 1.Press “LEARN” button	**E L** 0 (success)	**F F**(fail)
	2.Press number key “4” to select EDID Port	**4 L**	
	3. Press number key “3” to select Input 3	**4 3**	
	4.Press “TAKE” button		

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